



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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October 20, 2004

Anna Lael, District Manager  
Kittitas County Conservation District  
607 E. Mountain View  
Ellensburg, WA 98926

RE: Little Naneum Creek Siphon Project

Dear Ms. Lael:

The Little Naneum Creek Siphon Project sponsored by the Yakama Indian Nation and the Kittitas County Conservation District has been identified as a priority project for funding through the Water Conveyance Infrastructure grant program appropriated to the Department of Ecology by the legislature. These funds are being awarded based on the public benefits of the project. The Washington Department of Fish and Wildlife assessed the project and determined there are sufficient fish benefits to qualify the proposal for funding in the requested amount of \$76,220.

If you accept the amount granted for this project, a detailed scope of work will need to be developed. Dave Burdick, the Water Resources Program grant coordinator, is the lead for this next step in the process. If you have any question please contact Dave at (360) 407-6094 or email [dbur461@ecy.wa.gov](mailto:dbur461@ecy.wa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Stohr".

Joe Stohr, Manager  
Water Resources Program

Enclosure

cc: Dave Burdick  
Curt Hart  
Henry Fraser, Yakama Indian Nation  
Carol Ready, Kittitas County Water Purveyors



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October 13, 2004

**TO:** Dave Burdick, Water Resources  
Department of Ecology

**FROM:** Perry Harvester, Habitat Program, Water Team  
Washington Department of Fish and Wildlife

**SUBJECT:** Assessment of the salmonid benefits of the Conveyance and Infrastructure Improvement Project, titled, *Little Naneum Creek Siphon* located on Little Naneum Creek, Tributary to Yakima River, The project is located in the Southeast 1/4 of Section 18, Township 17 North, Range 19 East, Kittitas County, WRIA 39.

### **Background**

This project (sponsored by the Yakama Indian Nation and the Kittitas County Conservation District) is located on Little Naneum Creek that is part of the "Wilson-Naneum-Cherry Creek Complex". The "Wilson-Naneum-Cherry Creek Complex" is one of the largest sub-basins in the Kittitas Valley (approximately 408 square miles) and is collectively comprised of canals, laterals, siphons, spillways, irrigation return drains, and natural instream flow. Post irrigation development, Naneum, Coleman, Whiskey, and Mercer Creeks are routed through Wilson Creek. Naneum Creek currently enters Wilson Creek at approximately RM 1.8 and Wilson Creek enters the Yakima River at RM 147. Habitat condition in lower Naneum Creek is generally poor with excessive sedimentation, little habitat diversity and channel complexity, poor floodplain connectivity, and numerous fish passage barriers. Most of the stream reaches below the first three miles downstream of the forested reach have been straightened and dredged and the channel bifurcates into numerous irrigation delivery channels with a trapezoidal configuration.

Due to its relatively large size, good water quality, the production potential for summer steelhead and coho in upper Naneum Creek is considerable, as many miles of good rearing and spawning habitat are present within the forested reach above the uppermost irrigation diversions. Old catch records, some dating to the 1930's indicates the presence of bull trout in Coleman Creek (USFWS 2001 DRAFT). Bull trout presence is currently unknown. There is currently no anadromous fish access to upper Naneum Creek due to multiple check structures associated with irrigation diversions.

Water quality, including stream temperatures in the lower and middle reaches of the Creek, are likely limiting during summer months as a high proportion of the flow consists of runoff from surrounding irrigated agriculture and riparian vegetation is often sparse.

### **Priority Ranking**

The Wilson-Naneum-Cherry Creek Complex, including lower and middle Naneum Creek received a “poor” ranking in the “Water Acquisition Program” prioritization matrix (which prioritized streams within the 16 Critical Sub-basins for restoring instream flows) due to several factors, including the assessment provided in the Limiting Factor Analysis (WSCC 2001). Riparian condition, substrate condition, floodplain connectivity, off-channel habitat condition, and fish passage conditions are all ranked as being “poor” within this stream. One of the primary reasons for the low ranking was that there has not been sufficient passage or screening to justify reevaluation, however there has been measurable progress in addressing these limiting factors over the past year.

The middle and lower reaches of Wilson and Naneum Creeks and most of their associated tributaries have been converted to irrigation delivery systems (YSS 2001 Draft). Many stream reaches have been rerouted, channelized, piped, or resemble high velocity trapezoidal ditches with poor habitat conditions. However, riparian vegetation, spawning substrate, and habitat parameters within the upper forested reaches of Naneum Creek are generally ranked as being “good” with some fine sediment concern associated with forest roads in close proximity to the stream.

### **Flow**

A USGS gaging station was maintained for 20 years (1957-1978) on upper Naneum Creek above the uppermost diversions. Stream flows averaged 57.1cfs for the period of record, or 0.82cfs/square mile for 69.2 square miles of the upper watershed. Low flows dropped to 10 cfs or less in most years. While flows in lower Naneum and Wilson Creeks are generally not limiting to salmonids due to supplemental flow from irrigation returns, the reach of stream between the upper KRD canal crossing upstream to the old gage station are likely to be too low for salmonid passage and rearing most years in late August through mid-October ( little gage data exists in the lower reaches of Naneum Creek). USBOR gage data from the Charlton Road crossing area during 2001 and 2002 indicated that flows ranged between 4.5 and 9.4 cfs between the months of June and October.

Landowners in the vicinity of the stream reach between the John Wayne Trail and the old Vantage Highway indicate that flows are also very low or the stream occasionally dries up during the irrigation season. Another area where flows are limiting is that reach just above the KRD canal crossing as no return water supplements flow above that point and

numerous diversions are present. While rearing habitat would be expected to be limited in areas where flow is limiting during the summer, flow is generally adequate when adult steelhead or coho would be expected to be migrating.

### **Fish Benefits (Passage and Screening)**

It has long been recognized that fish access to and from the upper watershed is the most limiting factor to salmonids in this sub-basin. Despite recent efforts to provide passage, only partial access is provided above RM 2.0 and additional seasonal barriers are located at RM 4.3 and 6.0 (this project) (WSCC-2001). A complete barrier exists at RM 9.0 and an unknown number (perhaps dozens) of barriers exist above that point.

Progress is being made to provide access to upper Naneum Creek. Over the past year there has been additional inventory and planning efforts at removing barriers to anadromous fish migration. This project complements other passage and screening efforts on Naneum Creek and upstream on the Bull Ditch.

Bull Ditch, which originates as a surface diversion from the Yakima River, current bisects and enters Little Naneum Creek at the above-described location. The water mixes with Little Naneum Creek and then is diverted back out of the creek via a check dam and unscreened gravity diversion. Mixing these waters could lead to false attraction of salmonids into Naneum Creek that are destined for the upper Yakima River. In addition, the check structure within Little Naneum Creek is a fish passage barrier. The Bull Ditch Company originally sought water rights out of Naneum Creek and has been using water from the Creek for many decades. They have recently dropped pursuit of irrigation water rights from the creek in the Yakima River Basin adjudication process since implementation of recent water conservation projects has reduced their need for additional conveyance water. Thus, installation of a siphon under the creek will isolate Bull Ditch water from Naneum Creek and will ensure that no water from the creek is co-mingled with, and diverted into, the ditch. Instream flow will then be preserved in the creek.

This proposal involves installation of a siphon in the Bull Ditch under Little Naneum Creek and removal of the diversion dam from the Creek. It also involves the installation of a series of weirs to prevent upstream head-cutting and to provide fish passage over the step in the grade that has developed at the diversion structure. This project will also prevent the need for a fish screen at the point of diversion where the Bull Ditch leaves Little Naneum Creek. Resident salmonids are currently entrained into the ditch via this unscreened diversion and onto agricultural croplands.

## **Other Restoration Efforts**

Other salmonid restoration efforts are now occurring within this sub-basin and additional projects are planned. A complete inventory of passage barriers and unscreened diversions by the Yakima Tributary Access and Habitat Program (YTAHP) is now largely complete. Riparian fencing, revegetation, fish passage, Centennial Clean Water Act, and other water conservation programs and projects have been implemented by the Yakama Indian Nation, DOE, WDFW, BPA, and DNR within this sub-basin. It is expected that considerable progress will occur in passage and screening efforts over the next decade.

The KCCD is currently working with irrigators who volunteered to begin the process of screening and providing fish passage on over 35 diversions on Naneum, Coleman, Cooke, Parke, Caribou and Badger Creeks (1999,KCCD). Work includes both instream and on-farm improvements to meet NMFS screening requirements, as well as improving delivery systems to achieve water use efficiencies. This project proposal complements these other restoration efforts to ultimately provide fish access to upper reaches of the Naneum Creek where many miles of suitable spawning and rearing habitat exists.

## **Conclusion**

Due to the number of barriers and unscreened diversions other enhancement programs have been hesitant to place a high priority on restoration projects in the upper reaches of the Naneum-Wilson Creek watershed. This remains prudent as providing access to upstream areas where unscreened diversions exist would place anadromous fish at risk. However, this project proposal is focused on diversions lower down in the watershed and it would improve anadromous fish passage through lower reaches of the watershed. The short term benefits of the project would be to provide access to additional rearing area for juvenile salmonids, and prevent resident and anadromous salmonids from being entrained into the Bull Ditch. Salmonid recovery efforts have generally been focused in the lower stream reaches where benefits can be realized within relatively short time periods. Salmonid access to the upper reaches of Naneum Creek, while desirable, will not be possible until other fish passage barriers upstream are removed.

This project will benefit fish resources by:

- Eliminating the co-mingling of Bull Ditch water with Little Naneum Creek water that could result in a false attraction problem to anadromous salmonids migrating to the upper Yakima River.
- Avoiding the need to fund and install a fish screen at the point of diversion of the Bull Ditch from Little Naneum Creek, and prevent entrainment of fish into the Bull Ditch.

- Increasing instream flow within Little Naneum Creek.
- Improving fish passage conditions in Little Naneum Creek through removal of the check dam structure associated with the Bull Ditch diversion.

This project fits well with the concept of incrementally linking passage improvements and screening projects by starting at the mouth of the stream and progressing upstream to provide additional fish access.

Despite the initial low ranking of the lower reaches of the Naneum Creek watershed, this project proposal is located within a stream reach that will result in measurable public resource benefits in both the short and long term and we recommend that it be funded.

Cc: Water Team  
Richard Visser – WDFW, Habitat Program  
Steve Kropp - WDFW, Habitat Program  
Theodore Clausing - WDFW, Habitat Program  
Scott Nicolai – Yakama Indian Nation  
Hank Frasier – Yakama Indian Nation

#### Literature Cited

Kittitas County Conservation District. 1999. Upper Yakima River Watershed Project. Report funded by WA Dept. of Ecology.

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